Remarks

Claims 3-8, 10, 11, 13-18 and 21-25 were pending. Of these, claims 3-8, 13, 18 and 21 were withdrawn by the Examiner.

Claims 3-8, 10, 11, 13-18 and 21-25 are cancelled.

Claims 26-45 are new.

The application now contains claims 26-45.

Claims 26-37 are all supported by the now cancelled claims as they appeared in Applicants' previous amendment mailed June 19, 2008. In order further prosecution, and in light of the Examiner's restrictions, Applicants have amended to the claims to focus on particular features of the invention, but reserve the right to pursue any deleted material in subsequent divisional applications.

Claim 26 is analogous to now cancelled claim 17. Definitions of R7 and R8, accidentally omitted from claim 17, are supported by now cancelled claim 18.

Claim 27 is supported by now cancelled claim 18 with the deletion of all material related to the group Z or ArZ. Applicants believe that the material related to Z and ArZ , which represented the potential for a compound containing two pyrimidine units, was responsible in large part for the withdrawal of claim 18. Claim 28 is supported by now cancelled claim 22 with the deletion of all material related to the group Z or ArZ.

Claims 29-34 are analogous to now cancelled claims 23, 14, 10, 11, 21 and 15 respectively. Claim 35 is supported by withdrawn claim 8. Claim 36 is supported by withdrawn claims 7, but all material related to formulae XIIa, XIIb, XV, XVI and XVII is deleted.

Claims 37-46 are supported by now canceled claims 24, 25, 15, 16 and the claims above.

The elected species, tris-terphenyl pyrimidine is encompassed by claims 27-34 and 37-43. Although new claims 27, 33, 35, 36, 38, 44 and 45 are based in part in previously withdrawn claims, the instant amendments have deleted information related to structures which contain a second pryimidine ring bound to the first pyrimidine through a group V, W, Y, or X. There are no existing claims which are analogous to previously withdrawn claims 3-6.

No new material is added.

Rejections

The claims are rejected on the grounds of non-statutory obviousness type double patenting over co pending Application Number 11/587,691. Applicants note that two of the instant inventors are the only inventors of the co pending application. Nonetheless, Applicants will provide a terminal disclaimer over commonly assigned Application Number 11/587,691 upon the resolution of all other pending issues involving the instant application.

All previously pending claims were rejected under 35 USC 103(a) as obvious over Fink, et.al., US 6,352,791, in view of Thelakkat et.al. Polymers for Advanced Tech., vol 9, p 429-442 (1998) and Schomaker et. al., J. Org. Chem. vol 66 no.21 p 7125 (2001). As the instantly amended claims are very similar to the previously pending claims, it is a sound assumption that the rejections also are deemed to apply to instant claims.

Applicants respectfully traverse the rejections.

Fink discloses electroluminescent devices comprising triazine compounds similar in design to the instant devices. Thelakkat mentions the broad class of pyrimidines in a list of "potential" generic pi deficient species that may have applicability as electron transport/hole blocking materials. Schomaker teaches a general procedure for derivatizing pyrimidine, but is silent about any potential use of such compounds.

Applicants have respectfully pointed out that the instant devices comprise pyrimidines and Fink dos not disclose or suggest pyrimidines; Thelakkat gives no examples or data relating to pyrimidines, and only mentions the class in passing without further discussion or examples even though specific examples are given for a selection of the other generically mentioned species.

The present Action however states that when considering the art as a whole, Thelekkat discloses pyrimidines and triazines as being potentially useful in similar uses, Fink discloses the use of triazines in EL devices, and Schomaker discloses a general process for derivatizing pyrimidines. Thus, while the instant compounds are not made or tested in the art, the Action states that one would have reason to believe that pyrimidines would function analogously to triazines.

Applicants respectfully point out that establishing a case of obviousness when "considering the art as a whole" there must be a showing that one skilled in the art at the time of the invention would have selected the elements of Applicants' invention to solve the problem at hand. Applicants grant that there is good logic in the Examiner's position; however, Applicants maintain that the instant invention provides significant benefits over the art, and that there is no suggestion in the art to have selected the instant, previously unexemplified pyrimidines over any of the other compounds of the generic disclosure of Thelekkat.

Enclosed is a declaration filed under rule 132 signed by inventor Thomas Schafer. The declaration describes a comparison of the electron transporting efficiencies in two EL devices of pyrimidines of the invention and analogous triazines of Fink. The pyrimidines tested are the elected species, tris-terphenyl pyrimidine and the tris-biphenyl pyrimidine.

The declaration clearly shows that the pyrimidines of the invention provide significantly higher efficiencies than the analogous triazines. This is despite the apparent structural similarities between the pyrimidines and triazines. This is also surprising in that the pyrimidines and triazines both have very similar low lying HOMO (highest occupied molecular orbital) values which is typical for electron transporting materials. For example, HOMO values calculated from CV measurements in solution using Fc/Fc+ as an internal standard revealed a value of -5.6 eV for each of PYM 2 and TZ 2. The suggestion is made that the superiority of the pyrimidines may be due to a lower lying LUMO (lowest unoccupied molecular orbital), but this is a hypothesis to which Applicants do not wish to be bound.

In any case, given the structural similarities between the pyrimidine and triazine core and the similarities in the low lying HOMO levels, the differences observed and reported in the above tables are unexpected as well as significant.

Applicants submit that many other pyrimidines found in the instant application, and instant claims, represent compounds that vary significantly from the analogous, e.g., triazine, compounds exemplified in the art. Applicants believe that by showing the advantages two of the simplest pyrimidine derivatives over the art, derivatives that would likely be some of the first compounds suggested to the practitioner by the art following the reasoning of the Action, they have made the case that pyrimidines are not as similar to triazines in their properties as Thekkalat seems to suggest. Applicants therefore respectfully submit that claims to pyrimidines aside form those tested in the declaration, also represent allowable inventions, particularly in light of the instantly presented data.

As claims 27-34 and 37-43 all encompass the elected species and compounds similar thereto, Applicants respectfully submit that the present showings overcome the 35 USC 103(a) rejections over Fink, Thelakkat and Schomaker for said claims and kindly ask that the rejections be withdrawn and, pending the filing of appropriate disclaimers, claims 27-34 and 37-43 be found allowable.

Applicants further kindly ask that, upon finding claims 27-34 and 37-43 , claims 35, 36, 44 and 45 be rejoined and also found allowable, especially in light of the deletion of material relating to bis-pyrimidine compounds.

In the event that minor amendments will further prosecution, Applicants request that the examiner contact the undersigned representative.

Respectfully submitted,

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Attachments: Declaration under rule 132 signed by Thomas Schafer